

Notes on *Tetralthea procumbens* Gunn ex Hook.f. (Tremandraceae)

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ABSTRACT

A case is made for the recognition of *Tetralthea procumbens* Gunn ex Hook.f. as a species distinct from *Tetralthea pilosa* Labill.. A description of *T. procumbens* is provided, its affinities to *T. pilosa* subsp. *pilosa* and *T. pilosa* subsp. *latifolia* Joy Thomps. are discussed and a key to distinguish the three taxa is supplied. *Tetralthea procumbens* is apparently widespread in Tasmania, but known from only two high altitude locations in Victoria.

Introduction

This study was undertaken to facilitate the preparation of the account of Tremandraceae for the forthcoming *Flora of Victoria* Volume 4. Problems arose in assigning a name to three specimens from the Snowy Plains area of the Eastern Highlands of Victoria. They were clearly very similar to a number of specimens at MEL from both highland and lowland areas of Tasmania. These collections had all been filed as *Tetralthea pilosa* subsp. *pilosa*, following the revision of *Tetralthea* by Thompson (1976). Although *T. pilosa* shows great variation across its range, these small procumbent plants are remarkably distinctive and worthy of re-examination.

Methods

This study is based mostly on the morphological examination of dried herbarium specimens from MEL, CBG, HO and NSW, but additional information has been gained by the observation of living plants growing *in-situ* in Victoria. Measurements given in the description are derived from herbarium material so allowance must be made for possible shrinkage on drying. The relevant type specimens have been examined.

Taxonomic history

The taxon herein referred to as *Tetralthea procumbens* first appeared in the literature as *Tetralthea calva* F.Muell. ex Schuch. var. *pulchella* F.Muell. ex Schuch. (Schuchardt 1853), from high mountainous areas of Tasmania. *Tetralthea procumbens* was described by Hooker in his *Flora Tasmaniae* (Hooker 1855); there he made the statement 'Mr Gunn [collector of the type] considers this a most distinct species'. It was subsequently reduced by Bentham (1863) to *T. pilosa* var. *procumbens* (Hook.f.) Benth. with the comment 'I have considerable doubts whether this elegant Tasmanian variety may not prove permanently distinct'. Bentham (1863) also reduced *T. calva* var. *calva* to synonymy under *T. pilosa* and *T. calva* var. *pulchella* and *T. gunnii* Hook.f. to synonymy under *T. pilosa* var. *procumbens*. Rodway (1903) treated *Tetralthea procumbens* as synonymous with *T. pilosa* var. *calva* Rodway (including *T. gunnii*), this being a new varietal epithet coined by Rodway rather than a new combination reducing *T. calva* to varietal status under *T. pilosa*. Synonymy under *T. pilosa* was ascribed in the first edition of *The Student's Flora of Tasmania* (Curtis 1956) but in the second edition (Curtis & Morris 1975) the taxon was again recognised as a distinct species. Although in her revision of *Tetralthea*, Thompson (1976) reduced *T. procumbens* to synonymy under *T. pilosa* without affording it any formal rank, it is still treated as a distinct species in *A Census of the Vascular Plants of Tasmania* (Buchanan 1995).

Taxonomy

Tetratheca procumbens Gunn ex Hook.f., *Fl. Tasman.* 1: 35, t. 7A (1855).

Tetratheca pilosa Labill. var. *procumbens* (Gunn ex Hook.f.) Benth., *Fl. Austral.* 1: 132 (1863), *nom. illeg.*, the earlier *T. calva* var. *pulchella* was placed in synonymy. TYPE: '(Gunn, 217, 309, 649)' and 'Summit of the Western Mountains, elev. 3800 feet; also near the sea, on heathy plains, at Circular Head etc, Gunn.' SYNTYPES: Gunn 217 (NSW 119678, NSW 119679).

Tetratheca calva F.Muell. ex Schuch. var. *pulchella* F.Muell. ex Schuch., *Syn. Tremandr.* 27 (1853). TYPE: 'In insul. Van Diemen legerunt Gunn et in montibus altis Tasmanniae cl. Müller in Herb. Sonder.' SYNTYPES: MEL 1008363, MEL 1008381, MEL 1008382. *Tetratheca pilosa* Labill. var. *calva* Rodway, *Tasman. fl.* 10 (1903) *p.p.*, as to *T. procumbens* but excluding *T. gunnii*, both cited in synonymy by Rodway.

Procumbent to weakly ascending sub-shrub; taproot sturdy; branches usually many, 5-20(-30) cm long, most emanating from near base of plant; stems terete, often irregularly ridged and appearing quadrangular near nodes, scabrous, virtually glabrous, sometimes with a few short, tubercle-based hairs and glandular hairs, particularly near nodes or on young growth. *Leaves* alternate, subopposite or in irregular whorls of 3, linear to linear-lanceolate, 2-8 mm long, 0.5-1.5(-2) mm wide, straight to arcuate, apex usually acute, mucronate, base truncate, margins mostly revolute to mid-vein, both surfaces usually scabrous, lower surface with dense short, stiff hairs along mid-vein and near margins; petiole to c. 0.5 mm long. *Flowers* solitary in leaf axils; peduncles 1-3 mm long, elongating to c. 4 mm in fruit, glabrous; bracts linear, c. 0.5 mm long, pubescent; sepals ovate, c. 1 mm long, glabrous outside, hairy on inner surface particularly on and near margins, attached inside top of receptacle, deciduous; petals obovate, ovate or elliptical, 3-4.5(-5) mm long, 1-2.5 mm wide, usually widest beyond middle, lilac-pink or white, often with darker longitudinal veins, deciduous; stamens 8, 2-2.5 mm long; filament 0.5-1 mm long; body of anther 1-1.5 mm long, glabrescent; orifice c. 0.2 mm wide; ovary 2-(less often 4-) celled, with a mixture of scattered short fine hairs and glandular hairs; ovules 1 per cell; style slender, to c. 1.5 mm long. *Fruit* obovate to obcordate, 2-4 mm long, 1.5-3 mm wide, with a sparse mixture of simple and glandular-hairs particularly near apex; seeds more or less oblong, 1.5-2.5 mm long, pubescent; appendage with several twists, cream. (Figs. 1 & 2)

FLOWERING PERIOD

October to January depending upon altitude.

DISTRIBUTION AND HABITAT

In Tasmania found mostly at high altitudes but also occurring at lower elevations almost to sea level. In Victoria it is known from only two sites, at about 1100 m and 1420 m above sea level respectively (Fig. 3). The high altitude habitat is generally low heath on moist peaty soils or on *Sphagnum* moss near streams or in rock crevices. At lower altitudes in Tasmania, plants grow in grassy woodlands and shrubby heathlands.

NOTES

Thompson (1976) recognized two subspecies of *Tetratheca pilosa* based mostly on leaf arrangement, leaf shape and ovary indumentum (see key). The type subspecies is widespread in Tasmania, scattered in western Victoria and localised in South Australia mainly in the Mount Lofty Ranges. *Tetratheca pilosa* subsp. *latifolia* is found in northern Tasmania, mainly eastern Victoria and south-eastern New South Wales. The two subspecies are very closely related and occasional specimens, particularly some from Tasmania, are difficult to assign to one or the other subspecies. *Tetratheca procumbens* is relegated by Thompson to synonymy under the type subspecies with a very cursory explanation.

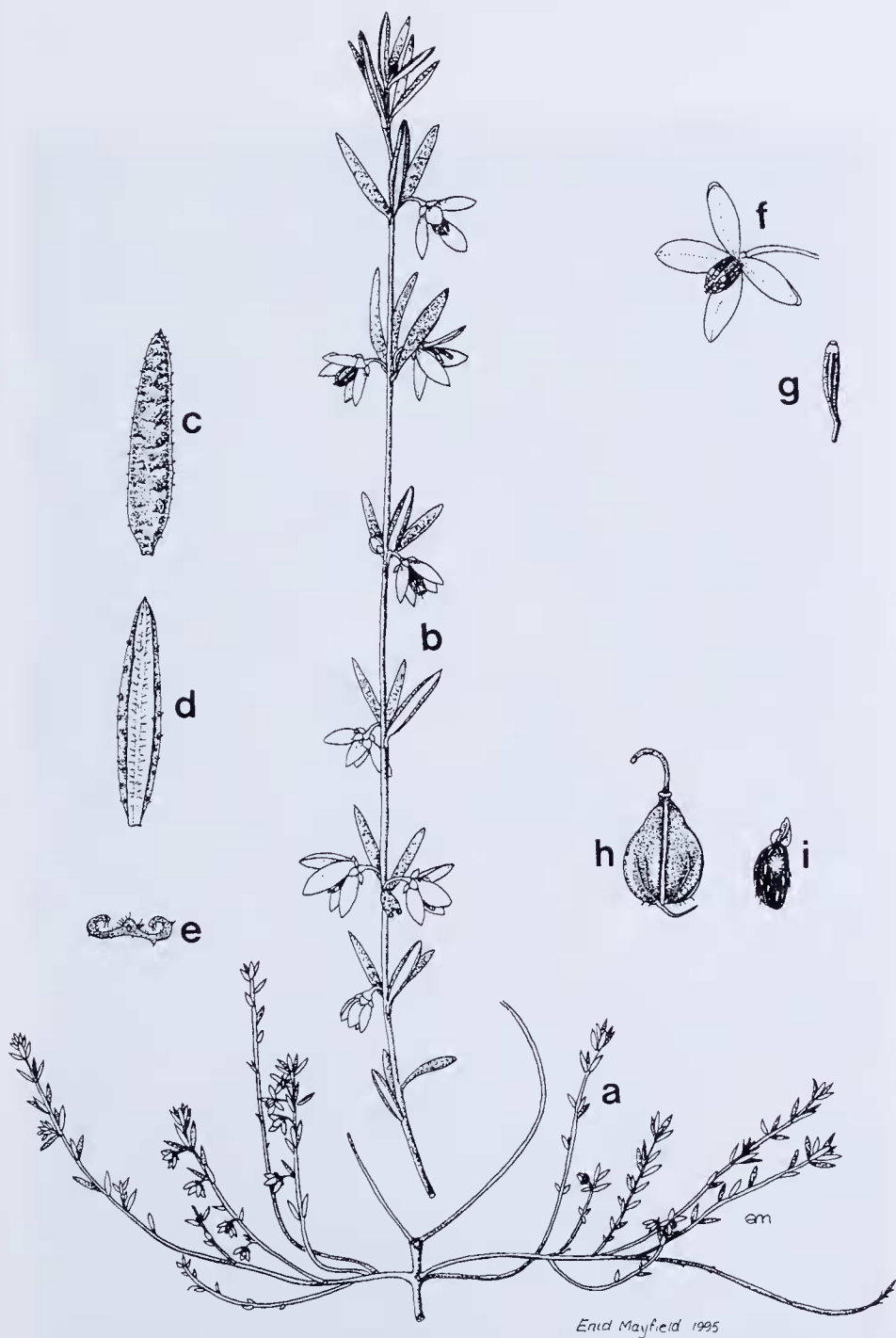


Fig. 1. *Tetralthea procumbens*: a - plant habit x0.5, b - flowering branch x2, c - leaf from above x5, d - leaf from below x5, e - section through leaf x10, f - flower x4, g - stamen x5, h - capsule x4, i - seed x4. a-g drawn from *Beauglehole 43478* (MEL); h, i drawn from *W.H. Archer* (MEL).



Fig. 2. *Tetratheca procumbens*: Plant *in-situ*, Snowy Plains, Victoria.

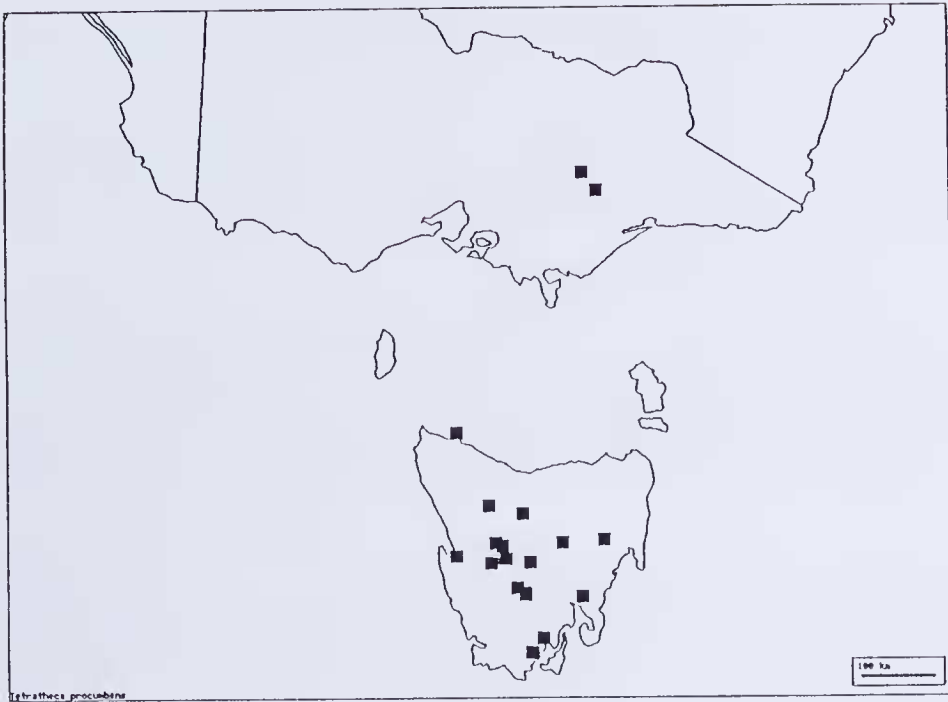


Fig. 3 Distribution of *Tetradlea procumbens*.

The distinctiveness of *T. procumbens* has been recognised by its various collectors over the past 140 years. A combination of features readily distinguish most specimens even in the dried and pressed state. Plants are small and procumbent with much branching near the base and stems that seldom extend for more than about 20 cm. They are quite scabrous and often have occasional tubercle-based hairs on the stems and leaf undersides and margins. The leaves are small and usually subopposite, alternate or arranged in irregular whorls of three. The flowers are small and produced singly in the leaf axils on short, glabrous peduncles. The petals are usually pale lilac-pink with darker longitudinal veins, sometimes apparently fading to white.

Some fragmentary material, particularly from low altitude areas of Tasmania (including the type of *T. pilosa*), is difficult to identify with any confidence. Extensive field study is required to determine the morphological limits of the taxa in the *T. pilosa* complex growing in lowland habitats of Tasmania. Pending the outcome of such a study it would seem prudent to retain *T. procumbens* as a distinct entity particularly in view of the isolated Victorian populations and their possible threatened status.

In Victoria the three taxa occupy distinct geographical areas with little overlap in their ranges and no reports of any two being sympatric. All three are generally identified easily in the field in Victoria and from herbarium material collected in that State.

CONSERVATION STATUS

Widespread and apparently well conserved in Tasmania; occurs within the Alpine National Park in Victoria but so few colonies are known that it is probably best regarded as vulnerable.

SELECTED SPECIMENS (41 specimens examined)

VICTORIA: Moroka Range, 2 Nov. 1973, *Beaulehole* 43483 & 43478 (MEL 1518271, MEL 1518270, NSW 368296); Eastern Ranges; South Bryce Plain, Snowy Range, 24 Nov. 1980, *Walsh* 984 (MEL 641258).

TASMANIA: St. George's Bay, 1892, *W. Fitzgerald* (MEL 1008242); Southport, *Stuart* (MEL 10077949, MEL 659452); Charlotte Cove, 14 Oct. 1984, *A. Moscal* 8661 (MEL 1620760); Near Lake Dobson, Mt. Field National Park, 14 Dec. 1952, *R. Melville* 2368 (MEL 521058, NSW 368286); Mt. Ironstone, Dec. 1900, *F.A. Rodway* (NSW 119682); Circular Head, 8 Nov. 1837, *R.C. Gunn* 217 (NSW 119678, NSW 119679);

Ironstone, Dec. 1899, *F.A. Rodway* (NSW 114023); Cradle Mountain, Dec. 1915, *F.A. Rodway* (NSW 119677); Between Bronte & Derwent Bridge, 18 Nov. 1960 & 24 Nov. 1965, *M.E. Phillips 729* (CBG 002996, CBG 013807); Cradle Mountain, 16 Dec. 1990, *M.M. Richardson 395* (CBG 9012276); 7 miles down from Butler's Gorge towards Tarraleah, 4 Dec. 1965, *M.E. Phillips 1049* (CBG 031298); Mt Field National Park, 15 Dec. 1929, *H.F. Comber 1848* (HO 23320, HO 23318, HO 23323); Lake St Clair, 21 Dec. 1937, *H.D. Gordon* (HO 23360); Snow Hill, 12 Nov. 1988, *P. Collier 3756* (HO 118672); Lyall Highway near Lake St Clair, 30 Nov. 1971, *W.M. Curtis* (HO 29421, HO 29425); Gravel pits, Southport, 7 Dec. 1958, *W.M. Curtis* (HO 23345); Mountain Creek, north of Lake Sorell, 22 Nov. 1987, *P. Collier 3010* (HO 120336); Wombat Moor, Mt Field National Park, Dec. 1944, *W.M. Curtis* (HO 29423); Kelly Range adjacent to Kelly Basin, Macquarie Harbour, Mar. 1979, *S.J. Berrigan 216* (HO 30618).

KEY TO THE TETRATHECA PILOSA COMPLEX IN VICTORIA.

- 1 Plant procumbent or weakly ascending; stems much-branched basally; branches to c. 20 (rarely to 30) cm long; petals <5 mm long; peduncles <4 mm long in mature flower *Tetratheca procumbens*
- 1: Plant erect or spreading; stems not much-branched basally; branches mostly 20-60 cm long; petals >5 mm long; peduncles 4-9 mm long in mature flower 2
- 2 Leaves mostly alternate, linear to narrow-ovate, usually <1.5 mm wide, margins tightly revolute; ovary glabrous or pubescent, hairs usually short and gland-tipped *Tetratheca pilosa* ssp. *pilosa*
- 2: Leaves alternate, opposite or whorled, narrow- to broad-elliptic or suborbicular, usually >1.5 mm wide, margins flat, recurved or loosely revolute, particularly near apex; ovary usually with long, hollow, shining hairs *Tetratheca pilosa* ssp. *latifolia*

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